Antennas

MultiPort Series

DATA SHEET

Dual Band Eight Port Antenna

OPA65R-BW4AA

- Four foot (1.4 m) tall, eight port dual band antenna with a 65° azimuth beamwidth covering 713-748 / 768-803 MHz and 1710-1880 MHz frequencies
- Array Optimized for B3 and B28 performance
- Innovative RF Connector design which allows for blind mate connections with an IP67 rating on all connections. Ideal for Integrated Antenna/Radio attachments
- Blind Mate connector design allows for easy RRU field replacements, without taking down the antenna or replacing the whole assembly
- Integrated Blind Mate Connector design is RRU specific
- Exceeds minimum PIM performance requirements
- Equipped with an Internal PHS Band Filter
- Equipped with an Internal ITS Band Filter, covering 713-748 MHz and 768-803 MHz
- Equipped with new Blind Mate 4.3-10 connectors
- Equipped with two Internal RET Controllers (Type 17iG3)

Overview

The CCI Integrated Radio Series Antenna is a eight port antenna, with four low-band ports covering 713-748 / 768-803 MHz and four mid-band ports covering 1710-1880 MHz. The CCI Integrated Radio Series Antenna provides the capability to deploy 4x4 Multiple-Input Multiple-Output (MIMO). The CCI Integrated Radio Series antenna has two independent RET controllers, providing independent RET control for the Low Band Ports and Mid Band Ports,

CCI antennas are designed and produced to ISO 9001 certification standards for reliability and quality in our state-of-the-art manufacturing facilities.

Applications

- 4x4 MIMO for the low band and 4x4 MIMO for the mid band
- Integrated Blind Mate 4.3-10 DIN connectors, with IP67 rating
- With CCI's Integrated Radio Series Antenna, wireless providers can reduce tower load, lease expense, deployment time and installation costs

MultiPort Series

SPECIFICATIONS

Dual Band Eight Port Antenna

OPA65R-BW4AA

Electrical Antenna

Ports	4 x Low Band Ports for 713-748 MHz & 768-803 MHz	4 x Mid Band Ports for 1710-1880 MHz
Frequency Range	713-803 MHz	1710-1880 MHz
Gain[1]	14.0 dBi [3]	16.2 dBi [4]
Gain (Average)[2]	13.1 dBi	15.4 dBi
Azimuth Beamwidth (-3dB)	64°	65°
Elevation Beamwidth (-3dB)	15.4°	9.2°
Electrical Downtilt	2° to 22°	0° to 15°
Elevation Sidelobes (1st Upper)	< -15 dB	< -18 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB
Cross-Polar Discrimination (at Peak)	> 25 dB	> 20 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB
Voltage Standing Wave Ratio(VSWR)	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -153 dBc	≤ -153 dBc
Input Power Continuous Wave (CW)	300 watts	300 watts
Polarization	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 ohms	50 ohms
Lightning Protection	DC Ground	DC Ground

[1]Peak gain across sub-bands.
[2]Electrical specifications follow document "Recommendation on Base Station Antenna Standards" (BASTA) V11.1.
[3]Antenna Peak gain is 13.8 dBi 770-773 MHz.
[4]Antenna Peak gain is 16.2 dBi1825-1845 MHz & 1860-1880 MHz.
Antenna equipment with internal PHS filter for Band 3, model 100-0386-01.

Mechanical

Dimensions (LxWxD)	55.0x19.6x9.6 in (1398x498x245 mm)
Survival Wind Speed	> 201 mph (> 90 m/s)
Front Wind Load[1]	190 lbf @ 100 mph 844 N @ 161 kph
Side Wind Load[1]	52 lbf @ 100 mph 231 N @ 161 kph
Effective Projective Area (EPA), Front[1]	7.5 ft^2 (0.7 m^2)
Weight[2]	96.3 lbs (43.7 kg)
RM-06/RM-07 Weight	4.2 lbs (1.9 kg)
MBK-48 Weight	53.1 lbs (24.1 kg)
MBK-49 Weight	95.0 lbs (43.1 kg)
Connector	8 x custom blind-mate IP67 4.3-10 connectors
Mounting Pole	3.5 to 5.5 in (89 to 140 mm) OD as measured

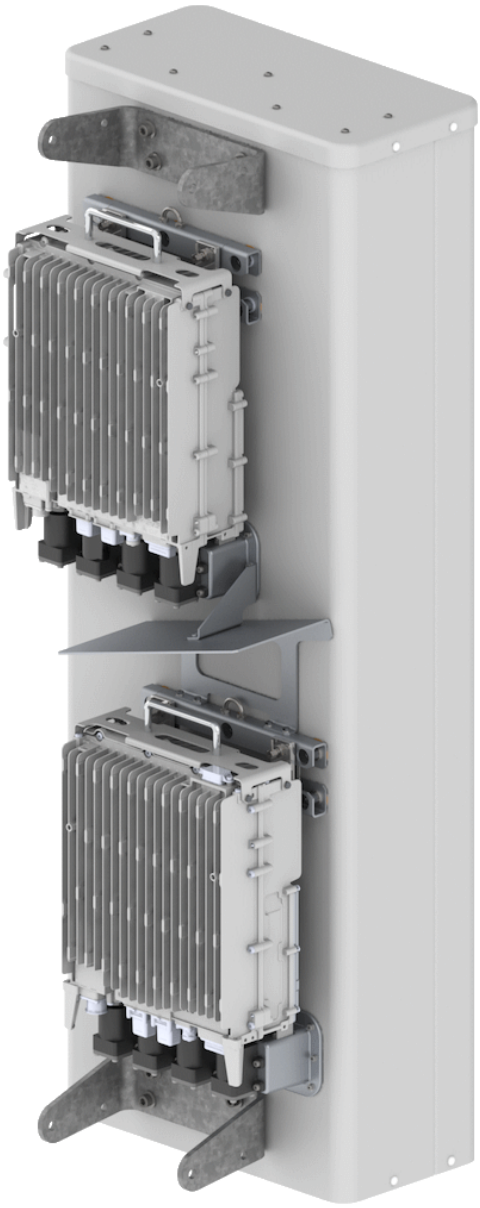
[1]Windload values calculated using CFD analysis and excludes radios
[2] Weight excludes Radios, RM-06/RM-07 and mounting kit

Mechanical

Rear View

OPA65R-BW4AA

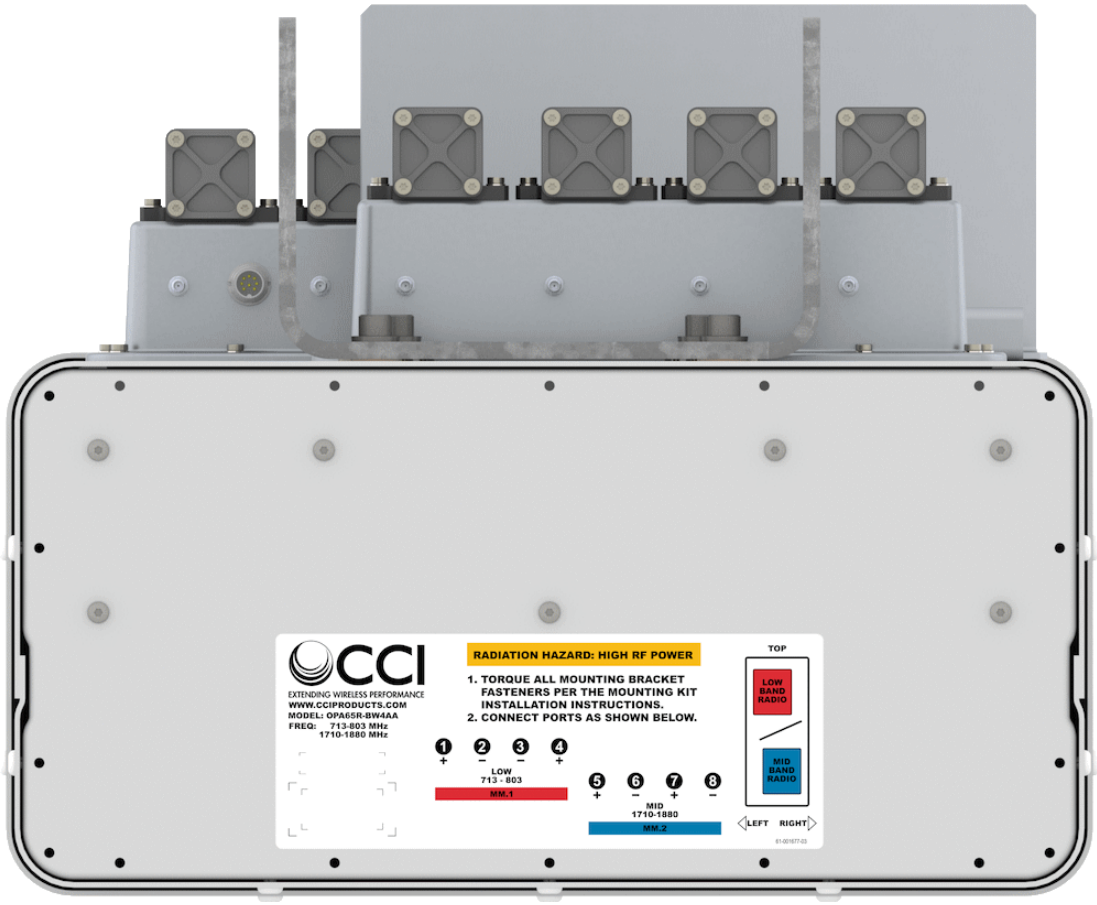
OPA65R-BW4AA with RRU's



Mechanical

Bottom View

OPA65R-BW4AA w/o RRU

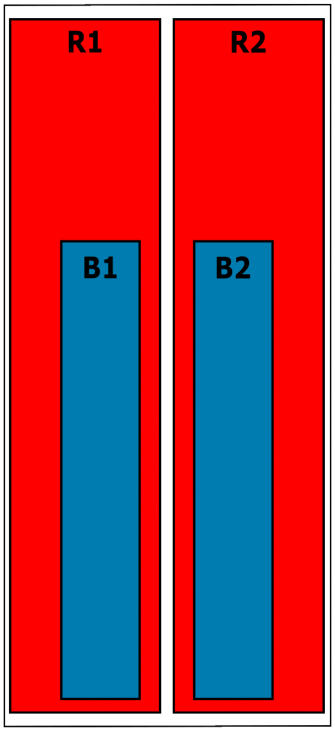


Mechanical

RET/Element Configuration

OPA65R-BW4AA

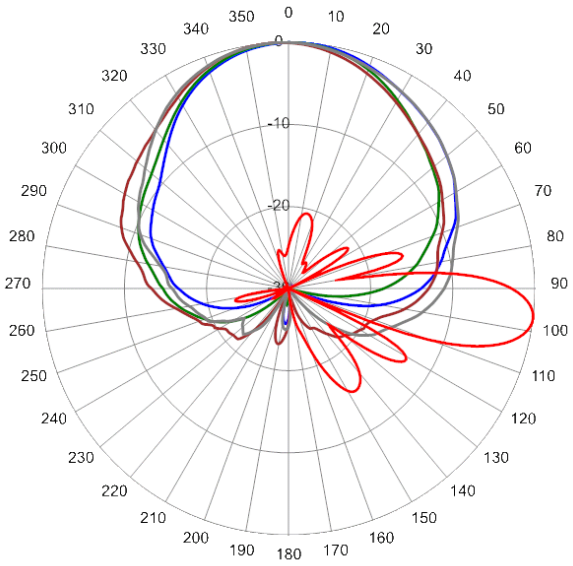
Top of antenna
Viewed from rear



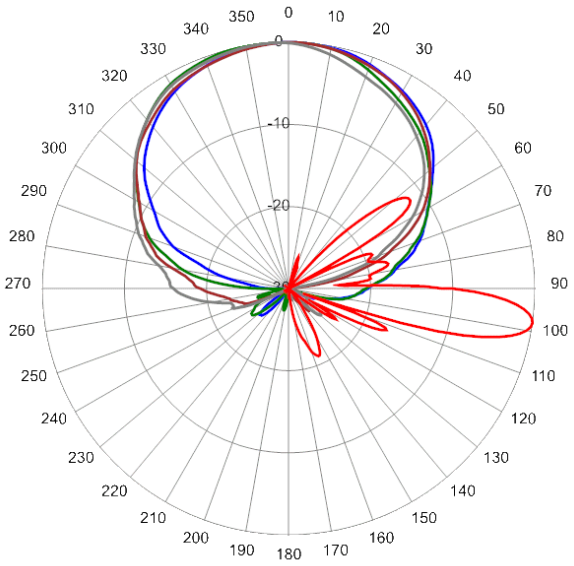
Array	Ports	Freq (MHz)	Ports controlled by common RET	AISG RET UID	NOKIA RADIO
R1	1, 2	713-803	1, 2, 3, 4	CIxxxxxxMM.1	AHPC
R2	3, 4	713-803			
B1	5, 6	1710-1880	5, 6, 7, 8	CIxxxxxxMM.2	AHEB
B2	7, 8	1710-1880			

Typical Antenna Patterns

For detailed information on additional antenna patterns, contact customer support at support@cciproducts.com



770 MHz Azimuth/Elevation 7°



1820 MHz Azimuth/Elevation 8°

Parts & Accessories

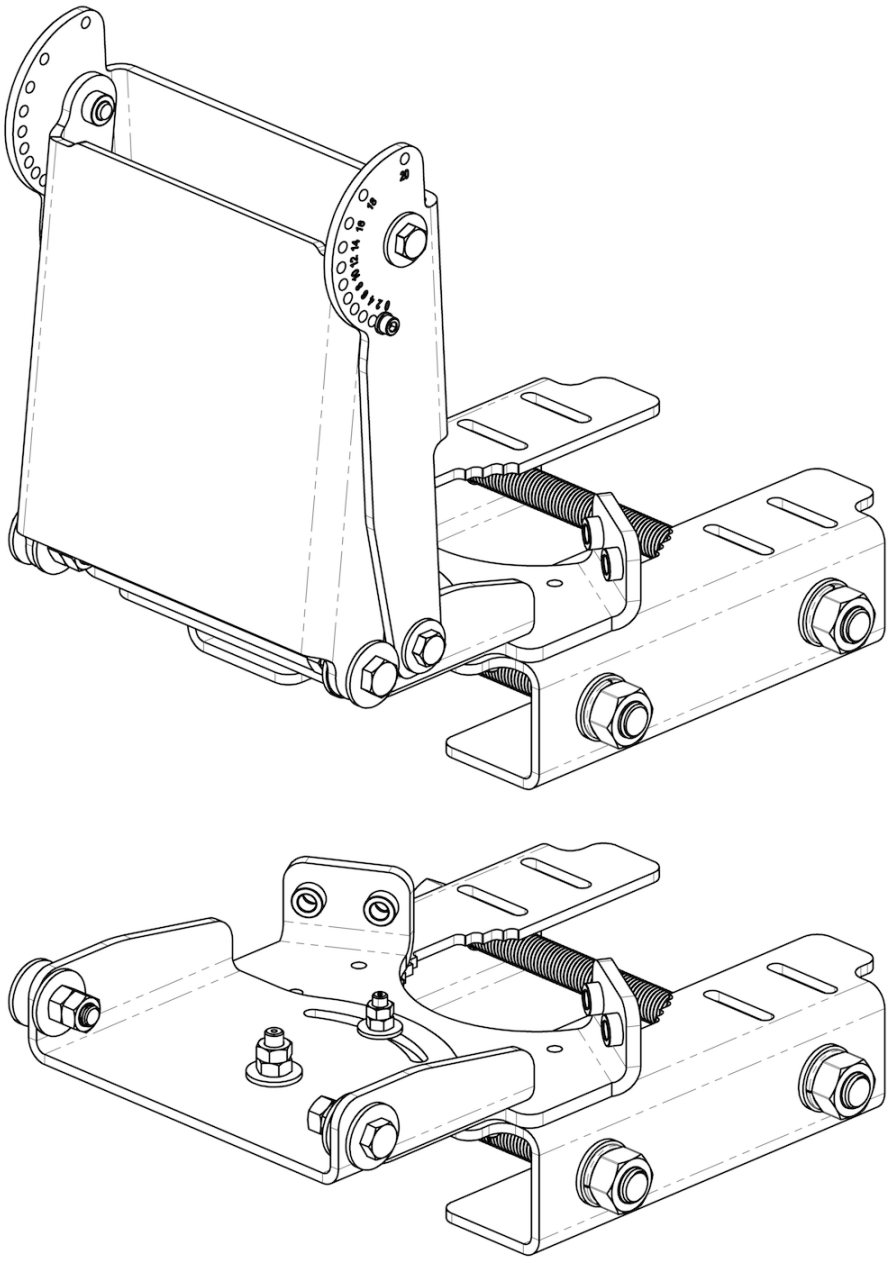
OPA65R-BW4AA	Four foot (1.4 m) Octoport antenna, with 65° azimuth beamwidth, 8x custom blind mate IP67 RF connectors and 2 factory installed Type 17iG3-S RETs (Single Internal) actuators are included.
MBK-48	Single antenna mounting bracket kit (top and bottom) with 0° to 20° mechanical tilt adjustment and ±30° of azimuth swing adjustment
MBK-49	Tri antenna mounting bracket kit (top and bottom) with 0° to 20° mechanical tilt adjustment and ±30° of azimuth swing adjustment
RM-06/RM-07	Radio mounting kit for Nokia AHEB / AHEH RRU Band 3 radio and Nokai AHPC RRU Band 28 radio
AISGC-M-F-20	20 in (0.5 m) Male/Female RRU to Antenna AISG cable (place holder at this time)
CAP-06	Connector Assembly Cap for Nokia AHEB and AHEH RU interface is not used
CAP-07	Connector Assembly Cap for Nokia AHCP RU interface is not used
TL-04	Tool for installation and removal of RRU on antenna

Mounting Bracket Kit

MBK-48

Mechanical

Weight	53.1 lbs (24.1 kg)
Hinge Pitch	51.18 in (1300 mm)
Mounting Pole Dimension	3.5 to 5.5 in (89 to 140 mm)
Fastener Size	M6 SHC SCREW, DIN 912, ISO 4762 M8 HEX NUT, DIN 934, ISO 4032 M10 HHC SCREW, DIN 933, ISO 4017 M12 HHC SCREW, DIN 933, ISO 4017 M12 HEX NUT, DIN 934, ISO 4032 M20 HEX NUT, DIN 934, ISO 4032
Mechanical Tilt	0° to 20°
Mechanical Swivel	± 30°



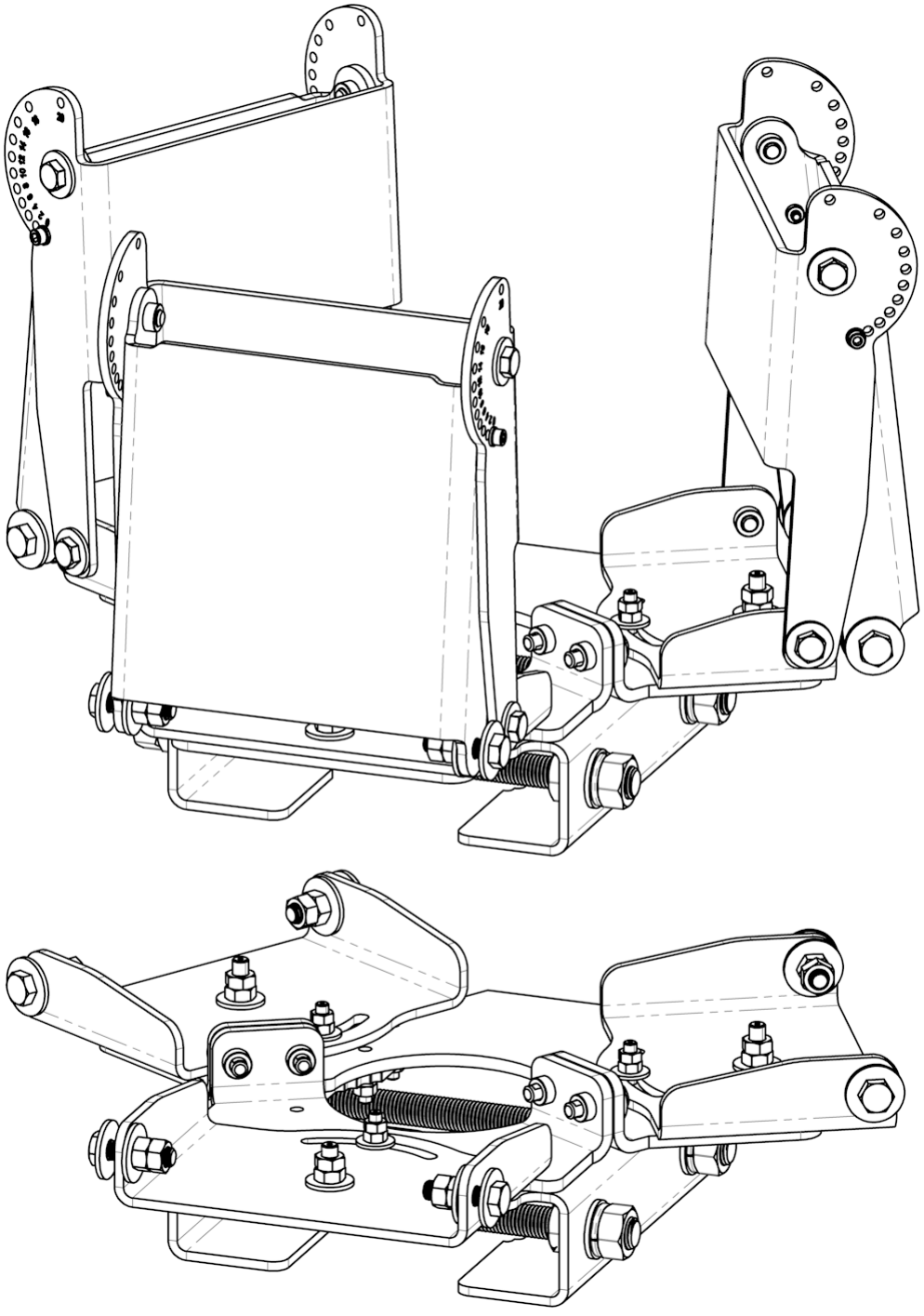
MBK-48

Mounting Bracket Kit

MBK-49

Mechanical

Weight	95.0 lbs (43.1 kg)
Hinge Pitch	51.18 in (1300 mm)
Mounting Pole Dimension	3.5 to 5.5 in (89 to 140 mm)
Fastener Size	M6 SHC SCREW, DIN 912, ISO 4762 M8 HEX NUT, DIN 934, ISO 4032 M10 HHC SCREW, DIN 933, ISO 4017 M12 HHC SCREW, DIN 933, ISO 4017 M12 HEX NUT, DIN 934, ISO 4032 M20 HEX NUT, DIN 934, ISO 4032
Mechanical Tilt	0° to 20°
Mechanical Swivel	± 30°

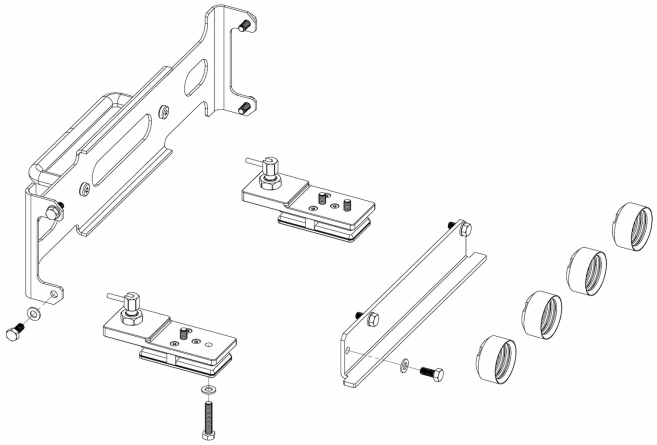


MBK-49

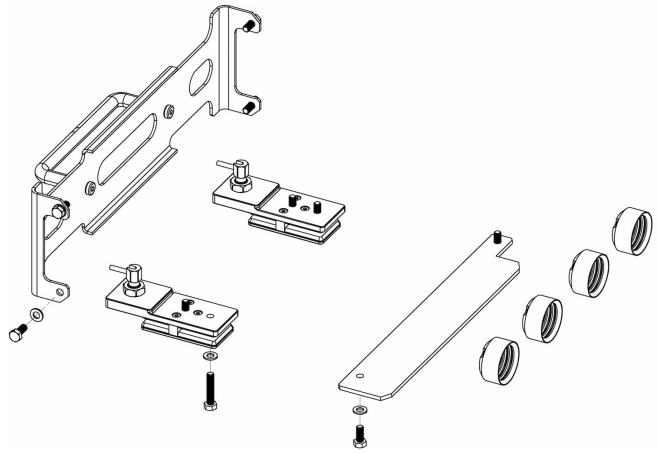
RM-06/RM-07 Radio Interconnect Kits

Mechanical Specifications

Model Number	RM-06
Fits Radio	Nokia AHEB RRH / AHEH RRH - Band 3
Model Number	RM-07
Fits Radio	Nokia AHPC RRH - Band 28
For Antenna Model	OPA65R-BW4AA
Overall Weight RM-06/RM-07	4.22 lbs. (1.91 kg) not including radio



RM-06



RM-07

Environmental Specifications

Model Number	RM-06/RM-07
Temperature Range	-45° to 70° C

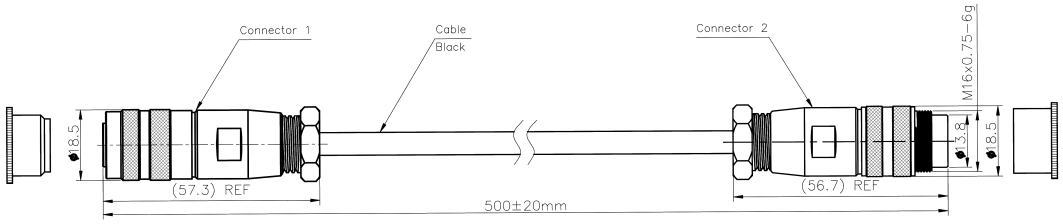
500 mm AISG Cable

Electrical Specifications

Protocol	AISG 1.1 and AISG 2.0
Maximum voltage	300 V
Rated current	5 A at 104° F (40° C)

Mechanical Specifications

Cables per kit	1
Connectors	2 x 8 pin IEC 60130-9 Straight male/ Straight female
Tightening torque	Hand tighten only ≈ 1.84 ft-lbs (2.5 Nm)
Construction	Shielded (Tinned Copper Braid)
Braid coverage	85%
Jacket Material	Matte Polyurethane (Black)
Conductors	1 twisted pair - 22 AWG 3 conductors - 18 AWG
Cable Diameter	0.307 in (7.8 mm)
Length (L in diagram)	19.7 in (500 mm)
Minimum bend radius	3.15 in (80 mm)



Famale cable connector contact cavity	Color of wire	Male cable connector contact cavity	Wire gauge	Function
1	Red	1	19AWG	+12V
2	No connected	2	No connected	Not used
3	Yelllow	3	24AWG	RS485 B
4	No connected	4	No connected	Not used
5	Orange	5	24AWG	RS485 A
6	Brown	6	19AWG	+24V Nominal
7	Black	7	19AWG	DC RETUN
8	No connected	8	No connected	Not used

AISG-Female to AISG-Male Jumper Cable

Environmental Specifications

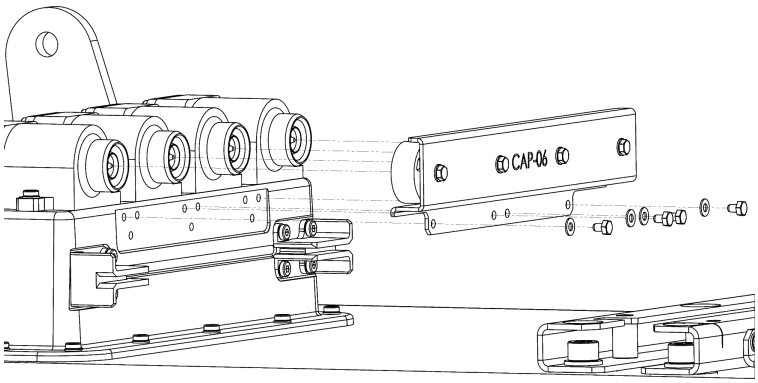
Fire Retardent	UL 1581 VW-1
Temperature Range	-40° to 85° C
Flammability	UL 1581 VW-1
Ingress Protection	IP67 when connected

Connector Assembly Cap

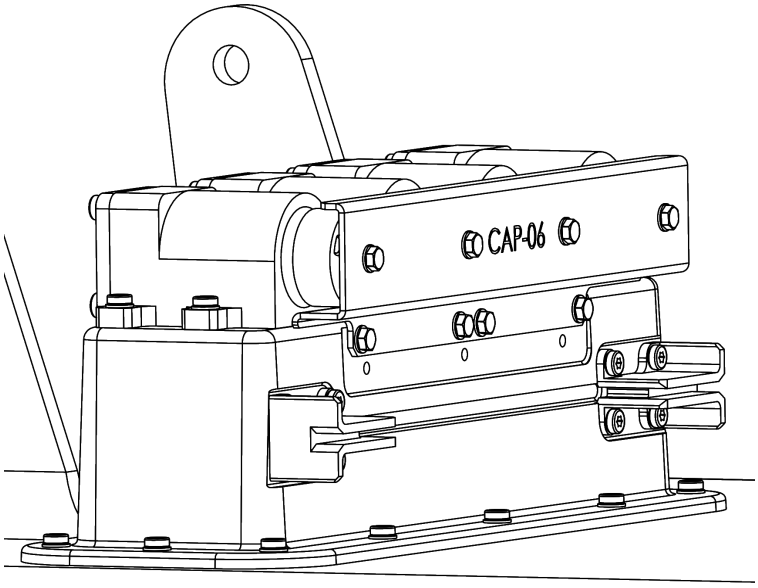
CAP-06

Mechanical Specifications

Individual Cable Part Number	CAP-06
Tightening torque for hardware	17.7-19.5 in lbs (2.0-2.2 Nm)
Construction	Aluminum frame, ASA, Silicone, SS hardware
Size	9.4 x 2.1 x 1.0 in (240 x 53 x 25 mm)



Installation View



Installed View

Environmental Specifications

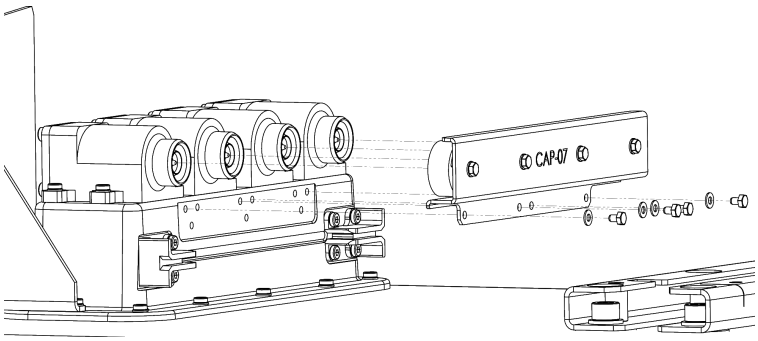
Individual Cable Part Number	CAP-06
Temperature Range	-45° to 70° C
Ingress Protection	ANSI/IEC 60529-2020, IP67

Connector Assembly Cap

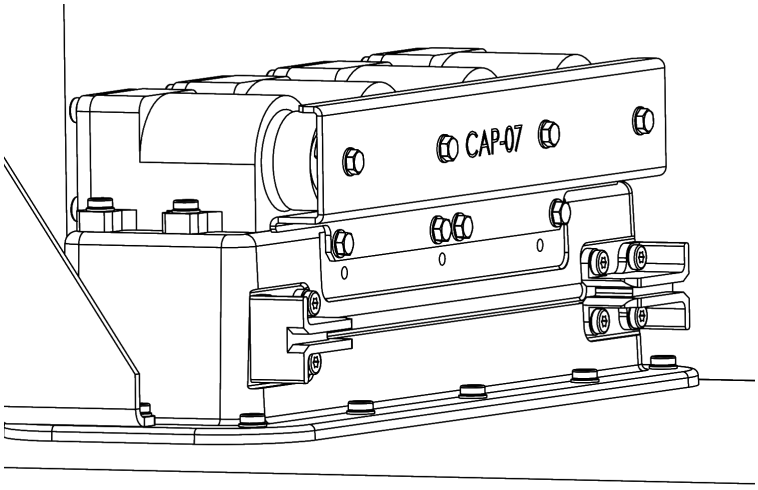
CAP-07

Mechanical Specifications

Individual Cable Part Number	CAP-07
Tightening torque for hardware	17.7-19.5 in lbs (2.0-2.2 Nm)
Construction	Aluminum frame, ASA, Silicone, SS hardware
Size	9.4 x 2.1 x 1.0 in (240 x 53 x 25 mm)



Installation View



Installed View

Environmental Specifications

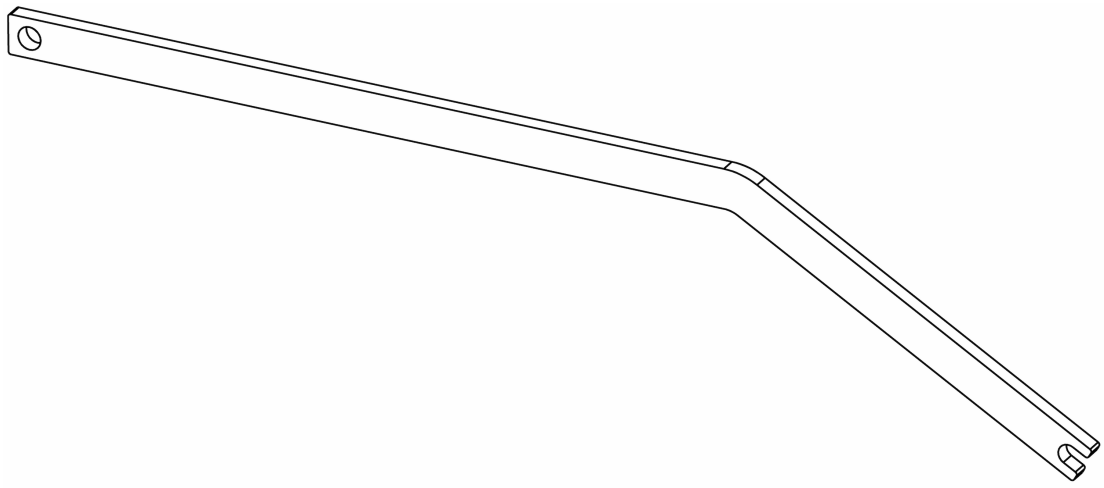
Individual Cable Part Number	CAP-07
Temperature Range	-45° to 70° C
Ingress Protection	ANSI/IEC 60529-2020, IP67

Radio Interconnect Tool

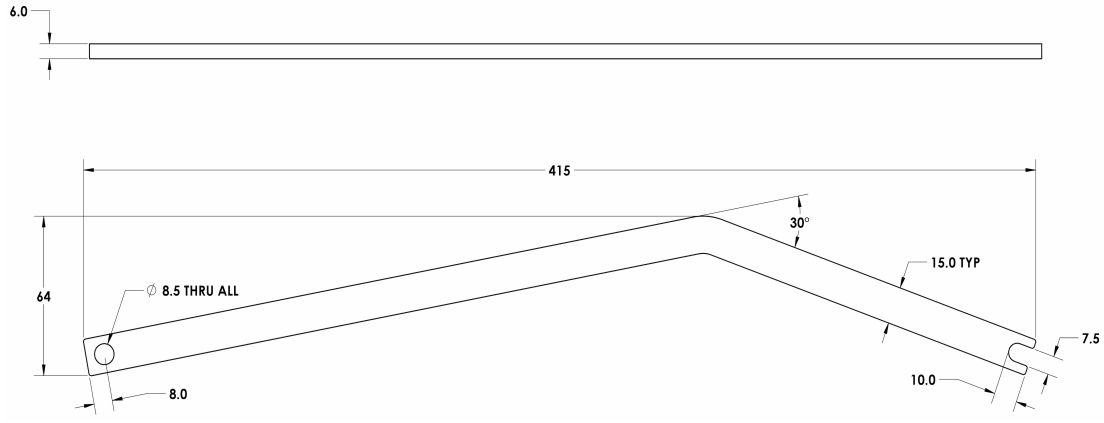
TL-04

Mechanical

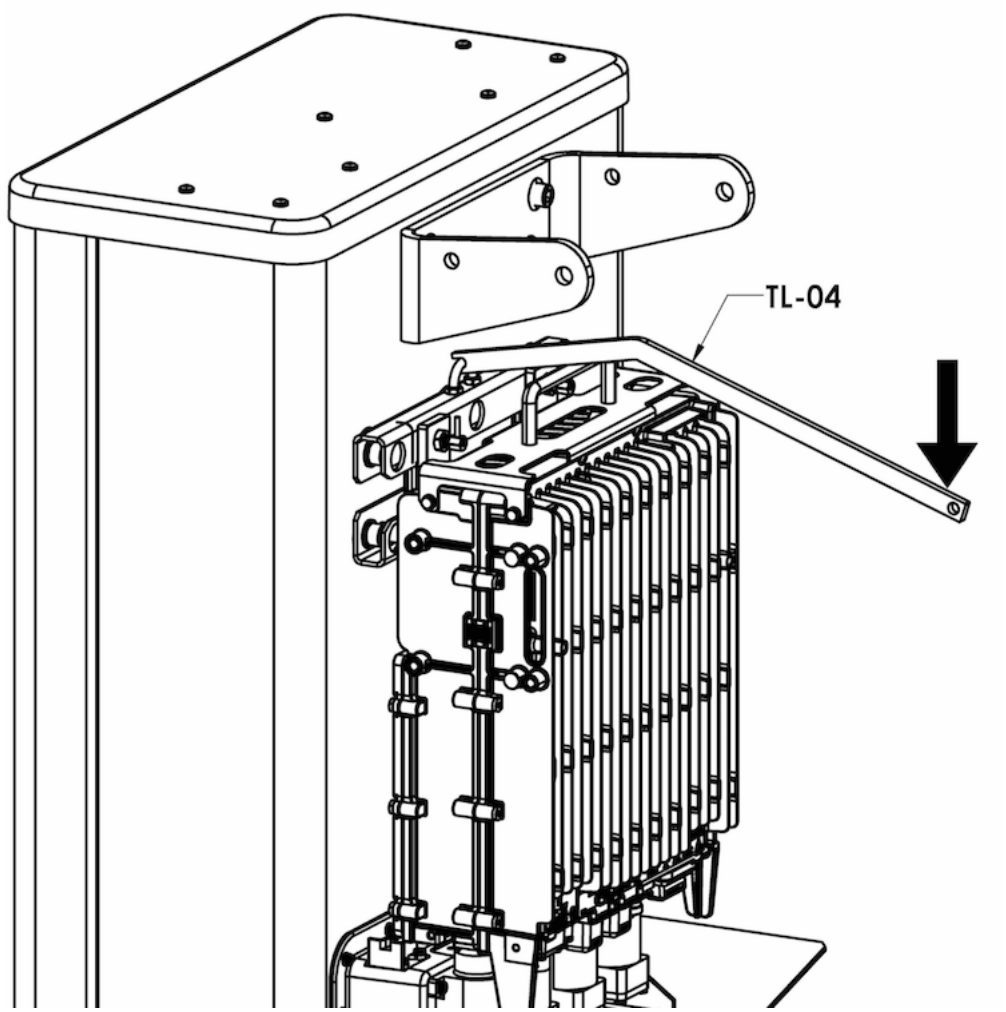
Model Number	TL-04
For Antenna Models	OPA65R-BW4A
Dimensions (L×W×D)	16.3×0.6×0.2 in (415×15×6 mm)
Overall Weight	0.68 lbs. (0.3 kg)



TL-04



TL-04 Size



TL-04 inserted to assist radio installation

Standards & Compliance

Safety	EN 60950-1, UL 60950-1
Emission	EN 55032
Immunity	EN 55035
Environmental	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC-60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-02-30, IEC 60068-2-52, IEC 60068-2-64, GR-63-CORE 4.3.1, EN 60529

Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001